

**PRM11****TRENDS OF RESEARCH RELATED BRAZIL PUBLISHED IN ISPOR MEETINGS: A BIBLIOMETRIC ANALYSIS FROM 1998 TO 2014**Nishikawa AM<sup>1</sup>, Minowa E<sup>1</sup>, Piedade AD<sup>1</sup>, Julian G<sup>2</sup><sup>1</sup>Evidências - Kantar Health, Campinas, Brazil, <sup>2</sup>Evidências - Kantar Health, São Paulo, Brazil

**OBJECTIVES:** Health economics and outcomes evaluations has become an indispensable tool to guide decision-making processes regarding incorporation of new technologies. Since 2009, with the publication of methodological guidelines by REBRATS, followed by creation of the National Committee for Health Technology Incorporation (CONITEC), in 2011, health economics research are emerging in Brazil. Therefore, the aim of this study is to evaluate temporal trends and main areas of interest in scientific production in these fields by a bibliometric analysis. **METHODS:** A search in the ISPOR Scientific Presentations Database was performed, using the term "Brazil" as keyword search in "Abstract" field, evaluating all results between 1998 and 2014. Abstracts were classified according to study characteristics (topic and subtopic), sponsorship and disease area. **RESULTS:** Among the total of 29,759 abstracts available in ISPOR presentation database, only 716 (2.4%) mentioned the term "Brazil" in the abstract, of which 169 (23.6%) the first author was not from Brazil and 325 studies (45%) were sponsored by pharmaceutical companies. Up to 2006, scarce publications were found. The majority of the studies (62.6%) was published from 2012 to 2014. The most studied diseases were cancer (16.9%), infection (5.9%), GI disorders (3.9%) and diabetes (3.1%) and 14.5% classified as "no specific disease". In addition, 57.3% of the analyses were classified as "cost studies" and 24.1% as "Health care use & policy studies". According to the subtopic, 140 (19.6%) were cost-effectiveness analysis and 73 (10.2%) budget impact analysis. **CONCLUSIONS:** This analysis showed a low rate of publication related to Brazil. On the other hand, the increasing number of published studies from 2012 may be related to CONITEC foundation. Thus, the rising number of studies observed over this period indicates an increase in importance of health economics as a support for health policies development and decision making process

**PRM12****TABAGISMO EM UNIVERSITÁRIOS: UMA REVISÃO SISTEMÁTICA DA LITERATURA**

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**OBJETIVOS:** caracterizar a prevalência e o consumo de tabaco em universitários a partir de uma revisão sistemática da literatura, no período de 2003 a 2013. **MÉTODOS:** A busca de artigos publicados foi feita nas bases de dados eletrônicas LILACS; MEDLINE e SCIELO com os descritores tabagismo e universitários. A metodologia PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses- para trabalhos de revisão sistemática foi usada na pesquisa. Na análise quantitativa dos dados coletados aplicou-se a distribuição de frequência simples, relativa e cálculo de média e na qualitativa, o critério de categorização. **RESULTADOS:** De 316 artigos encontrados, 62 foram incluídos por preencherem os critérios de inclusão. Deste total, a maioria foi publicada em espanhol (46,77%) e português (41,94%). Houve forte concentração de publicações nos anos de 2009 (19,35%), 2011 (22,58%) e 2012 (17,74%). A distribuição das publicações quanto áreas das revistas, em termos nacionais, mostrou que a saúde geral e a medicina tiveram maior número de publicações (19,35% para cada uma), seguida da enfermagem (14,51%). Para as revistas internacionais, a área de medicina se destacou em 19,35%, ficando a saúde geral com 12,90%. Sete eixos temáticos principais foram identificados, os quais foram distintos em termos de metodologia, mas estavam inter-relacionados sobre os aspectos: tabagismo e universitários da área da saúde (9); tabagismo e universitários de diversos cursos superiores (7); universitários, tabaco e outras drogas ilícitas (10); fatores que influenciavam o consumo tabágico em universitários (20); tabagismo e atividade física em universitários (6); universitários e medidas educativas sobre tabagismo (6) e malefícios do tabagismo em universitários (4). **CONCLUSÕES:** o tabagismo é um tema atual e relevante, pois apresentou um alto número de artigos publicados nos últimos anos; entretanto, estas publicações relatam divergências entre a prevalência e o consumo de produtos derivados do tabaco por universitários.

**RESEARCH ON METHODS – Modeling Methods****PRM13****PERFIL DEL GASTO DE BOLSILLO EN MEDICAMENTOS ESENCIALES EN PANAMÁ, 2014**

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**OBJETIVOS:** Obtener los perfiles socioeconómicos que caracterizan el acceso a los medicamentos, con base en el poder adquisitivo, disponibilidad y uso racional. **METODOLOGÍAS:** Diseño muestral estratificado, con selección aleatoria en 6 dominios en el ámbito nacional, cubriendo zonas urbanas, rurales e indígenas. Encuesta multipropósito de línea de base. La muestra fue de 2,696 individuos de 15 años y más. El instrumento recogió información sobre las características socioeconómicas, condiciones de salud, gasto, financiación, acceso, disponibilidad y uso racional de los medicamentos. El análisis estadístico, se realizó con el software SPSS 20.0. **RESULTADOS:** Las comarcas indígenas son las más pobres según la distribución del ingreso en el primer quintil, 41.9% en la Ngäbe Buglé y 62.7% en Madugandí. Las enfermedades crónicas (circulatorias y diabetes) y las infecciosas (diarrea, infecciones generales y malestar estomacal), son las principales morbilidades. El gasto promedio general fue USD 83.25, siendo en diabetes USD 96.81 en las diarreas, infecciones y malestar estomacal con USD 96.80. El 43.3% financia parcialmente la compra con sus ingresos y 13.0% no cuenta con los mismos, 50% de los medicamentos estuvieron disponibles y 61% declaró que el precio es inaccesible. Mientras tanto, 29% consume medicamentos sin receta, siendo mayor en las comarcas Ngäbe Buglé con 59% y Madugandí con 35%. La elasticidad ingreso resultó de 0.20 ( $t=2.577$ ,  $p=0.01$ ) indicando que los medicamentos son productos necesarios, con relación a la edad, por cada año adicional, el gasto en medicamentos

se incrementa en 2% ( $t=3.779$ ,  $p=0.000$ ). Respecto a la tenencia de seguro social la probabilidad de comprar medicamentos se reduce en -0.201 o un riesgo relativo de compra de 0.818 (Wald=4.241,  $p=0.039$ ). **CONCLUSIONES:** Existe una mayor vulnerabilidad de la población indígena, respecto al acceso a medicamentos. Se hace necesario desarrollar estrategias e intervenciones sanitarias para mejorar el acceso, disponibilidad y costo de medicamentos en Panamá.

**PRM14****CALIBRATION OF PIECEWISE MARKOV MODELS USING A CHANGE-POINT ANALYSIS THROUGH AN ITERATIVE CONVEX OPTIMIZATION ALGORITHM**

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**OBJECTIVES:** Relative survival represents cancer survival in the absence of other causes of death. Cancer Markov models often have a distant metastasis state, a state not directly observed, from which cancer deaths are presumed to occur. The aim of this research is to use a novel approach to calibrate the transition probabilities to and from an unobserved state of a Markov model to fit a relative survival curve. **METHODS:** We modeled relative survival for newly diagnosed cancer patients through a piecewise Markov model. For each segment we used a constant transition matrix with three cancer states: 1) no evidence of disease, 2) metastatic recurrence and 3) cancer death. We estimated the optimal time points at which the slope of the cumulative hazard changes using a free-knot spline model. We calibrated the transition probabilities using a two-step iterative convex optimization (TICO) algorithm. The dynamics of the disease can be defined as  $xt+1 = x_tA$ , where  $xt+1$  is the state vector that results from the transformation given by the monthly transition matrix  $A$ .  $A$  is a piecewise block-diagonal matrix that includes a block-diagonal matrix (i.e.  $A_1, A_2, A_3$ ) in each segment. **RESULTS:** We applied our method to model relative survival for stage 3 colorectal cancer patients 75 years old and younger. The estimated change points were at months 9 and 37. We compared our piecewise calibration method to a single-segment Markov model. While the single-segment converged faster, the piecewise method improved the goodness of fit by 50%. **CONCLUSIONS:** By estimating the change points in the relative survival we were able to find the optimal transition probabilities for a piecewise Markov model. This model allowed us to impose a particular structure defined by the progression of the disease. We propose a piecewise calibration method that produces more accurate solutions compared to a single-segment approach.

**RESEARCH ON METHODS – Statistical Methods****PRM15****APPLIED COMPARISON OF META-ANALYSIS TECHNIQUES**Baser O<sup>1</sup>, Lewis-Beck C<sup>2</sup>, Fritschel E<sup>3</sup>, Baser E<sup>4</sup>, Wang L<sup>5</sup><sup>1</sup>STATinMED Research, Columbia University, New York, NY, USA, <sup>2</sup>Iowa State University, Des Moines, IA, USA, <sup>3</sup>Texas Department of State Health Services, Austin, TX, USA, <sup>4</sup>STATinMEDResearch and Gazi University, Ankara, Turkey, <sup>5</sup>STATinMED Research, Plano, TX, USA

**OBJECTIVES:** Meta-analysis is an approach that combines findings from similar studies. The aggregation of study level data can provide precise estimates for outcomes of interest, allow for unique treatment comparisons, and explain the differences arising from conflicting study results. Proper meta-analysis includes five basic steps: identify relevant studies; extract summary data from each paper; compute study effect sizes, perform statistical analysis; and interpret and report the results. This study aimed to review meta-analysis methods and their assumptions, apply various meta-techniques to empirical data, and compare the results from each method. **METHODS:** Three different meta-analysis techniques were applied to a dataset looking at the effects of the bacille Calmette-Guerin (BCG) vaccine on tuberculosis (TB). First, a fixed-effects model was applied; then a random-effects model; and third meta-regression with study-level covariates were added to the model. Overall and stratified results, by geographic latitude were reported. **RESULTS:** All three techniques showed statistically significant effects from the vaccination. However, once covariates were added, efficacy diminished. Independent variables, such as the latitude of the location in which the study was performed, appeared to be partially driving the results. **CONCLUSIONS:** Meta-analysis is useful for drawing general conclusions from a variety of studies. However, proper study and model selection are important to ensure the correct interpretation of results. Basic meta-analysis models are fixed-effects, random-effects and meta-regression.

**RESEARCH ON METHODS – Study Design****PRM16****CHOLIC ACID DECREASES THE DISTRIBUTION COEFFICIENT OF SIMVASTATIN: A POTENTIAL FOR INCREASING SIMVASTATIN BIOAVAILABILITY**

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**OBJECTIVES:** Distribution coefficient is used as a quantitative measure for assessing a drug molecule affinity for the biological membranes. Since bile acids are known for their function as modifiers of drug penetration across biological membranes, the aim of this study was to estimate the influence of cholic acid (CA) on the distribution coefficient of simvastatin (SV) which is a highly lipophilic compound with extremely low water-solubility and bioavailability. **METHODS:** Distribution coefficients and logD of SV with or without CA were measured by shake-flask method in n-octanol/buffer systems at pH 5 and pH 7.4. SV concentrations in aqueous phase were determined by HPLC-DAD. In order to analyse theoretically complexation of SV with CA, semi-empirical PM3 method implemented in MOPAC software package in the Chem3D Ultra program has been applied. **RESULTS:** Upon addition of CA, statistically significant decrease of SV logD was observed at both selected pH values (from  $4.70 \pm 0.01$  to  $4.41 \pm 0.13$  at pH 5, and from  $4.59 \pm 0.06$  to  $4.40 \pm 0.04$  at pH 7.4). Analysing the molecular aggregates of SV with CA, it was observed that CA is